

**Translation**

PATENT COOPERATION TREATY

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Doc'n PCT/PTO 15 MAR 2005

PCT/JP2003/011587



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Applicant's or agent's file reference PCT2003-2	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/011587	International filing date (day/month/year) 10 September 2003 (10.09.2003)	Priority date (day/month/year) 19 September 2002 (19.09.2002)
International Patent Classification (IPC) or national classification and IPC C08J 3/12, 3/24		
Applicant NISSHINBO INDUSTRIES, INC.		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>9</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of _____ (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input checked="" type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand 04 March 2004 (04.03.2004)	Date of completion of this report 05 July 2004 (05.07.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ The international application as originally filed/furnished

☐ the description:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the claims:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	8, 10	YES
	Claims	1-7, 9, 11-13	NO
Inventive step (IS)	Claims		YES
	Claims	1-13	NO
Industrial applicability (IA)	Claims	1-13	YES
	Claims		NO

## 2. Citations and explanations

Document 1 (WO 01/70826 A (Sekisui Plastics Co., Ltd.), 27 September 2001), cited in the international search report, discloses a process for producing resin particles having a specified shape by mixing and dissolving a hydrophobic liquid compound in a polymerizable vinyl monomer, and suspension polymerization in an aqueous system, wherein, after obtaining resin particles by copolymerizing a vinyl monomer such as monomer having a glycidyl group, said resin particles are crosslinked by the action of a diamine such as ethylene-diamine in an organic solvent (page 15, line 4 from bottom to page 16, line 3).

Claims 1, 5-7, 9, 11 and 12

The inventions set forth in claims 9, 11 and 12 and the aforementioned invention disclosed in document 1 do not differ as regards the production process. Therefore, there is no substantial difference between the inventions set forth in claims 1 and 5-7, relating to flat particles obtained by such a production process, and the aforementioned invention disclosed in document 1 and consequently the inventions set forth in claims 1, 5-7, 9, 11 and 12 are not novel.

Document 2 (WO 01/89592 A (BASF AG), 29 November 2001) and document 3 (WO 01/91815 A (BASF AG), 6 December 2001), cited in the international search report, disclose processes for producing surface-crosslinked highly water absorbent polymer particles wherein a solution in which a compound used for crosslinking, such as a hydroxyalkylamide or oxazolinium ions are dissolved, is applied to the surface of highly water absorbent polymer particles; they also disclose highly water absorbent polymer particles which have acidic or basic functional groups, and the inclusion of a second surface crosslinking agent such as diglycidyl ether and/or a diamine in the aforementioned compound for crosslinking (claims)

Claims 1-7, 9 and 11-13

There is no difference between the inventions set forth in claims 9 and 11-13 and the inventions disclosed in documents 2 and 3 as regards the production process. Therefore, there is no substantial difference between the inventions set forth in claims 1-7, relating to flat particles obtained by such a production process, and the aforementioned inventions disclosed in document 2 and 3, and consequently the inventions set forth in claims 1-7, 9 and 11-13 are not novel.

Document 4 (JP 2001-342377 A (Nippon Shokubai Co., Ltd.), 14 December 2001), cited in the international search report, discloses mixing treatment of primary particles having functional groups on the surface thereof and secondary particles having on the surface thereof functional groups which can react with the aforementioned functional groups, to give composite particles comprising said primary particles surface-coated with said secondary particles (claims), and further mentions that this can be applied to primary particles having a flat shape

(paragraph [0007])).

#### Claims 1-7

Although document 4 does not mention the shape of the composite particles, the resulting particles can be considered to include flat particles, given that it mentions possible use of flat primary particles. Therefore, the inventions set forth in claims 1-7 are not substantially different from the aforementioned invention disclosed in document 4, and are not novel.

Document 5 (JP 7-179613 A (Kao Corp.), 18 July 1995) and document 6 (JP 1-297430 A (Nippon Shokubai Kagaku Kogyo Co., Ltd.), 30 November 1989), cited in the international search report, disclose processes for producing water-absorbent resins by bringing a powdered water absorbent resin having carboxyl groups into contact with water and/or an organic solvent in which is dissolved a crosslinking agent having two or more functional groups which can react with said carboxyl groups, to bring about a crosslinking reaction (claims).

#### Claims 1-7, 9 and 11-13

There is no difference between the inventions set forth in claims 9 and 11-13 and the inventions disclosed in documents 5 and 6 as regards the production process. Therefore, there is no substantial difference between the inventions set forth in claims 1-7, relating to flat particles obtained by such a production process, and the aforementioned inventions disclosed in document 5 and 6, and consequently the inventions set forth in claims 1-7, 9 and 11-13 are not novel.

#### Claims 8 and 10

Attaching or incorporating different fine particles

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on the surface or inside of flat particles is in itself a technique known before the filing date of the present application, as disclosed for example in document 7 (JP 2002-258513 A (Konica Corp.), 11 September 2002), cited in the international search report. Therefore, application of this known technique to an aforementioned invention disclosed in documents 1-6 is merely an option available to a person skilled in the art, and consequently the inventions set forth in claims 8 and 10 do not involve an inventive step.

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## Box No. VI Certain documents cited

## 1. Certain published documents (Rule 70.10)

Application No.  
Patent No.Publication date  
(day/month/year)Filing date  
(day/month/year)Priority date (valid claim)  
(day/month/year)

See supplemental sheet

## 2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure

Date of non-written disclosure  
(day/month/year)Date of written disclosure  
referring to non-written disclosure  
(day/month/year)

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: VI. 1.

JP 2003-268118 A      25.09.2003      13.03.2002

[EX] claims (Family: none)



**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

Claims 9-13

The constitution feature of claims 9-13 which gives flat particles cannot be considered to be clearly described, since comparative example 7, which is said not to give flat particles, falls within the scope of claims 9-13, although heating is performed for approximately 18 hours.